Bovine Tuberculosis Michigan UPDATE

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Michigan Department of Agriculture • Michigan Department of Natural Resources • Michigan Department of Community Health

Autumn 2004

Progress Report

by Bridget Patrick, Infectious Disease Liaison, Bovine TB Eradication Project Coordinator

The bovine TB project partners have had a busy spring and summer, so please accept my apologies for the delay in getting this update to you. In June, the multi-agency Bovine TB Eradication Project hosted a gathering of scientists from across the U.S. and Canada to discuss recent research findings related to TB testing. Program updates were also provided to bring guests up-to-date on departmental activities. Conference Proceedings will be published at the end of this year in place of the 2004 Activities Report. But in the mean time, here are a few highlights:

1) Graham Hickling gave a great talk on how success can turn to failure if momentum is lost. In the 1970s, New Zealand controlled the TB problem with $2 million annually. The program lost momentum and support from leaders and legislators over the years. Now they spend $30 million annually on bovine TB control efforts.
2) The DNR/USDA WS test-and-remove pilot project was successful in that four of the five components seemed to work:
   a) Trapping and collaring with radio collars;
   b) Drawing blood;
   c) Tracking down and removing positives from the wild population; and,
   d) Retrieving collars from negative deer in a timely fashion.

   The fifth component, the blood test kit, did not work as planned, but other simultaneous tests identified TB suspect deer.
3) Brent Rudolf, Wildlife Research Biologist for the MDNR Wildlife Division, showed us that the 5-county and DMU 452 Archery harvest saw a rebound (up 76 percent and 29 percent), and we saw a second consecutive firearm harvest increase in the area (in DMU 452 it was up 13 percent and in the 5-county area,

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Split State Status in Michigan

by Lana Kaiser, DVM, Michigan State University

Bovine tuberculosis (TB) is a contagious bacterial disease that is found in cattle, but can be transmitted between mammals, including humans. In 1917, the federal government established a Bovine TB Eradication Program nationwide that designated certain status levels for each state based on the prevalence of the disease.

The U.S. Department of Agriculture (USDA) has five designated status levels that apply to an entire state or a zone within a state:

1. Accredited Free
2. Modified Accredited Advanced
3. Modified Accredited
4. Accredited Preparatory
5. Non Accredited

The highest status level is "Accredited Free" which means that there is zero percent prevalence of bovine TB in a state (or zone). The lowest designated status is Non Accredited.

Each state (or zone) has specific requirements for movement, surveillance testing (keeping a close watch through whole-herd TB testing), record keeping and animal identification, depending on their USDA bovine TB status designation. The requirements are more restrictive in Non Accredited states and zones, and become less restrictive as states and zones move toward Accredited Free status.

In 1979, Michigan achieved Bovine TB Free Status. Unfortunately, in 1994, a TB-positive deer was harvested and subsequently diagnosed with a unique strainof bovine TB, not previously known to exist. As a result, the Michigan Department of Agriculture (MDA) and the Michigan Department of Natural Resources (DNR) embarked on a comprehensive surveillance plan to determine the extent of the disease in livestock and wildlife throughout Michigan.

Initial surveillance results led USDA to revoke Michigan's Bovine TB Free Status in 2000, and designate the entire state of Michigan as Modified Accredited, with extensive restrictions on animal movement. As a result, MDA established zones and high risk areas to enhance bovine TB eradication efforts.

From January 2000 to December 2003, MDA, USDA and private veterinary practitioners tested every known cattle, goat, bison and

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Bovine Tuberculosis State Status Designations

A New Strategy for Control of Bovine TB in Michigan White-tailed Deer

by Steve Schmitt, DVM, State Wildlife Veterinarian, MDNR

In 2003, discussions were held among personnel from the Michigan Department of Natural Resources (MDNR); Landcare Research Institute, Ltd., in New Zealand; Michigan State University (MSU); and the U. S.Department of Agriculture's Animal and Plant Health Inspection Service - Wildlife Services (USDA APHIS-WS) regarding ways that targeted reductions in the number of infected deer might be achieved. It was concluded that targeted culling of sick deer would be far more acceptable to hunters and landowners than would intensified harvesting of the deer population as a whole.

The outcome of these discussions was an agreement to pilot-trial a potential new bovine TB control strategy based on live-trapping and TB-testing of wild deer. Deer suspect for TB based on blood test results would be culled while test-negative deer would be released. A one-year pilot trial of this strategy was undertaken by MDNR and USDA-WS staff in the winter of 2003 in a township within DMU 452 that had a relatively high prevalence of bovine TB in the resident deer population.

One public meeting was held to discuss the project, and there were numerous items of media coverage. The general response to the proposed field trial was very positive. The majority of landowners who were contacted to ask permission for MDNR personnel to trap on their land were agreeable to the request. Supporters frequently and favorably cited the concept of removing TB positive deer from the population while allowing TB negative deer to survive.

Of the 119 deer that were captured from which a blood sample was collected, 60 (51.4%) were adults (1.5 years old) and 59 (49.6%) were fawns (6-9 months old). The majority (78.9%) of the captured deer were female. As expected, only a few adult bucks were captured by the clover traps (6.7% of captures).

Adult males are most likely to be infected with TB, but they are also the most sought after, and likely to be shot, by hunters. Thus, trapping complements hunting by targeting the TB-infected females in the deer population.

By tracking each deer's unique radio signal, USDA APHIS-WS personnel were able to locate and cull the six deer that were determined to be TB-suspect by blood test prior to their radio-collars dropping off.

The radio-collars were programmed using a computer to self-release at a future time (90 days). All collars dropped off as planned, were successfully retrieved, and were sufficiently undamaged to allow for refurbishment with a new self-release device.

Individual Animal Testing Guidelines

Working with USDA, several legislators, and producer representatives, MDA has committed to expand the TB testing activity of field staff to assist with some movement testing in addition to the whole herd surveillance TB testing conducted over the years in northern Michigan. MDA will pay private veterinary practitioners to perform TB testing for movement purposes under the same guidelines. This is an expansion of previous years' payments for whole herd tests only.

Individual animal testing for movement will be offered once annually for cattle herds in the Modified Accredited Zone. This testing may be done through scheduling directly with a fee-basis veterinarian and subsequent approval of MDA, or scheduling at least two weeks in advance with the MDA Atlanta Regional Office. Individual animal testing will be scheduled at times that are beneficial to program efficiency.

Herd owners are encouraged to schedule testing as early as possible to provide the most assurance that requested dates may be accommodated.

Any herds which do not complete testing, do not have animals prepared for testing upon arrival of testing personnel, or are unable to comply with their test date will be rescheduled at the discretion of the testing veterinarian and the MDA Atlanta office. Rescheduling of individual animal testing may be given a low priority for reintegration into the testing schedule.

It is the responsibility of the owner to provide animal handling for all bovine TB testing, and to have animals confined to a safe, workable building or corral, and available for testing at the scheduled time. MDA may provide a maximum of one chute and a limited number of portable gates for TB testing. No MDA or USDA personnel will be available for building corrals or to catch unconfined cattle.

North Country Beef Producers

With all the changes that have come in the past few months, a particular group of beef producers in Northeastern Lower Michigan stands out as progressive planners. North Country Beef Producers (NCBP) has taken advantage of the required electronic ID, using it as one of many positives for selling beef animals. It is becoming evident that Country of Origin Labeling, or COOL, is highly desirable, as many consumers want to know where their meat product originated.

Pooling its resources, NCBP became a cooperative, which gives it purchasing and selling power. NCBP has recently completed a 120-head Heifer Feed-out pilot project with MSU. Their heifers were sold on a grid and the packing company provided feedback and carcass data. These beef producers recently obtained a Market Analysis from the MSU Product Center for Agricultural and Natural Resources, Strategic Marketing Institute and have received a grant from USDA to conduct a study that will assess the production costs and feasibility of a cooperative effort to retain ownership and market cattle in Northeastern Lower Michigan.

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it was up 14 percent). The estimated 5-county deer population in 2003 was close to 100,000 and just under 30,000 deer were harvested.

4) The first herd of 2004, a dairy in Montmorency County, was reported TB positive in July. With Split State Status now in place, producers in the Northern Lower Peninsula will find significant changes to test-and-remove plans – all for the goal of achieving Modified Accredited Advanced status and then TB free status for the area.

5) Significant progress has been made in the Bovine TB Eradication Project, including the reduction in TB positive herds; a decline in disease prevalence in the wild white-tailed deer herd; and the removal of TB positive deer on private hunt club land.

Bovine TB Dogs

by Kurt C. VerCauteren, USDA APHIS-Wildlife Services, National Wildlife Research Center

To minimize direct and indirect contact between cattle and potentially disease-infected deer, methods to limit deer use of pastures and interactions with cattle are being sought. Livestock protection dogs have been used successfully for thousands of years to reduce predation on livestock, primarily sheep. Dogs socially bonded with cattle could minimize direct contact between deer and cattle, as well as deer use of pastures. To evaluate this, we conducted a study at captive white-tailed deer operations where the opportunity for deer/cattle interactions was greatly increased due to high deer densities. Protected pastures contained four cows and one dog and unprotected pastures contained just four cows.

The dogs wore radio frequency collars and the cattle were contained with two-strand electrified fences. Data on deer use of pastures and interactions among deer, cows, and dogs were collected via direct observation, animal-activated video systems at feed sites, and trail monitors and track plots along pasture perimeters. The dogs performed well: deer were about 75 times more likely to feed on cattle feed in pastures without dogs. In addition, deer were about 40 times more likely to contact cattle directly in pastures without dogs.

Antlerless Quotas

Past hunting seasons when unlimited antlerless permits were available were extremely successful on public lands. The white-tailed deer population in the five-county area was reduced to approximately 100,000 animals. While the population is limited on public land, it is still substantial on private land; therefore, the quotas are quite different. We encourage private landowners to use the antlerless permits and help fill quotas this year. As of August 12, 2004, there were 7,778 unfilled antlerless tags on private land in DMU 452.
Just as a reminder: In Alcona, Alpena, Crawford, Montmorency, Oscoda, Otsego, and Presque Isle counties, all baiting and feeding is prohibited. Statewide "Baiting" and "Feeding" are regulated separately and detailed information on early and late antlerless seasons in the "Special Regulations" area is available on the bovine TB Web site.

Early Antlerless Firearm Deer Season in Special Regulation Counties

An early firearm antlerless deer hunting season has been scheduled for October 9 through October 17, 2004, on private land in Alcona, Alpena, Crawford, Montmorency, Oscoda, Otsego and Presque Isle counties. All firearm hunters must wear Hunter Orange and must be must be 14 years old or older. Only antlerless deer on private land may be taken. Hunters must have permission from the landowner or leaseholder before hunting on private land and all recreational trespass laws are in effect. Hunting with a bow and arrow or firearm is permitted. Hunters must have an unused antlerless deer license (or Deer Management Assistance [DMA] permit) issued for the appropriate DMU to hunt deer during this season. **Note:** DMA permits are not stand-alone licenses. To hunt deer with a DMA permit, you must have purchased a regular firearm, combination, archery or antlerless deer license for the season in which you are hunting.

Late Antlerless Firearm Deer Season in Special Regulation Counties

There will be a late firearm antlerless deer hunting season on private land in Alcona, Alpena, Crawford, Montmorency, Oscoda, Otsego and Presque Isle counties (see map above) This season begins December 20, 2004, and runs through January 2, 2005. During this season, only antlerless deer on private land may be taken. Permission is required from the landowner or leaseholder. You may hunt with a bow and arrow or firearm. All firearm hunters must wear Hunter Orange and must be 14 years old or older. You must have an unused antlerless deer license (or DMA permit) issued for the appropriate DMU to hunt deer during this season.

Herd Accreditation

by Terry H. Conger, DVM, PhD,
Tuberculosis Herd Accreditation Veterinary Medical Officer
USDA, Animal and Plant Health Inspection Service, Veterinary Services

Purebred beef and/or dairy herd owners or managers that frequently move cattle interstate (e.g., for sale of stockers, or for exhibition/show purposes) can avoid the constraining "negative test within 60 days of movement" procedure by qualifying their herd as a Tuberculosis Accredited Herd. Private veterinary practitioners or government testing veterinarians can provide information on how to complete and submit an application for Herd Accreditation to the Veterinary Services (VS) office in East Lansing.

Herd Accreditation involves two complete herd negative tests, at an interval of 10 to 14 months apart, with each test including animals in the herd 12 months of age and over. Meticulous records must be maintained so that new, or missing, animals between two consecutive tests can be accounted for. Movement quarantines are also important - regulatory personnel must be able to confirm that animals that have traveled from the farm did not bring any disease back with them (basic biosecurity). After the second test, if proper documentation is provided, the Accredited Herd Certificate will be issued from the VS office in East Lansing. The Accredited Herd number will be recorded on the Health Certificate by the attending Accredited Veterinarian, in lieu of the test results.

The requirements to maintain an Accredited Herd located within the Modified Accredited Zone are still being discussed by the USDA officials. Because several species of wildlife are known to carry bovine TB in the Modified Accredited Zone, within the next six months, it is expected that an Accredited "Herd Plan" will be required. The plan will stipulate, in writing, what mitigating factors must be in place in order to: 1) prevent contact of wildlife (particularly white-tailed deer) with livestock feeding sites; 2) prevent access to feed storage areas; and, 3) minimize direct exposure to cattle.

To date, there are 73 Accredited Herds (16 in the Modified Accredited Zone and 57 in the Modified Accredited Advanced Zone) registered with the USDA VS East Lansing office. A total of 244 additional herds are awaiting their second whole herd negative test that will qualify them as an Accredited Herd.

For more information, consult your veterinarian, or contact Dr. Terry H. Conger, at (517) 324-5290, or by e-mail at Terry.H.Conger@aphis.usda.gov

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privately owned cervid operation in Michigan for bovine TB. During that time, DNR, the Michigan Department of Community Health (MDCH) and Michigan State University (MSU) tested thousands of hunter-harvested deer heads for bovine TB.

This surveillance testing revealed where bovine TB is endemic in the wild deer herd and where it was found in cattle. After careful consideration and scientific review, Bovine TB Eradication Project partners identified an area of known infection that included a buffer zone. In order to expedite eradication efforts and concentrate resources where they are most needed, MDA requested and was granted Split State Status for bovine TB from USDA in April 2004.

Split State Status designates Alcona, Alpena, Antrim, Charlevoix, Cheboygan, Crawford, Emmet, Montmorency, Oscoda, Otsego and Presque Isle counties, and those parts of Iosco and Ogemaw that are north of the southern most boundaries of the Huron National Forest and the Au Sable State Forest (see map on Page 1), as Modified Accredited in the Federal Code of Regulations. The remainder of the state has been designated by USDA as Modified Accredited Advanced, and includes the entire Upper Peninsula, and those counties in the Lower Peninsula not listed above.

Split State Status does not change the requirement for identification for Michigan cattle and all Michigan cattle must be officially identified prior to movement from the farm of origin. Cattle in the Modified Accredited Zone MUST be identified with Radio Frequency Identification (RFID) Electronic eartags. Cattle in the Modified Accredited Advanced Zone must be officially identified with a RFID, OR 9-digit USDA alphanumeric identification eartag, OR breed registry tattoo that matches exactly the tattoo on the registration papers.

Split State Status does not eliminate TB testing for cattle moving out of state, but it does make the federal requirements for movement out of state less restrictive for cattle coming from the Modified Accredited Advanced zone. In the Modified Accredited Advanced zone, breeding cattle will still be required to have an individual TB test prior to movement out of the state. In addition, other states do not have to recognize Michigan's Split State Status.

Each state can decide what testing it requires for cattle coming into their state from Michigan. These requirements can be more restrictive than the federal requirements, but they cannot be less. Prior to movement of cattle out of Michigan, call the State Veterinarian at the state of destination.

For more information, visit:

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